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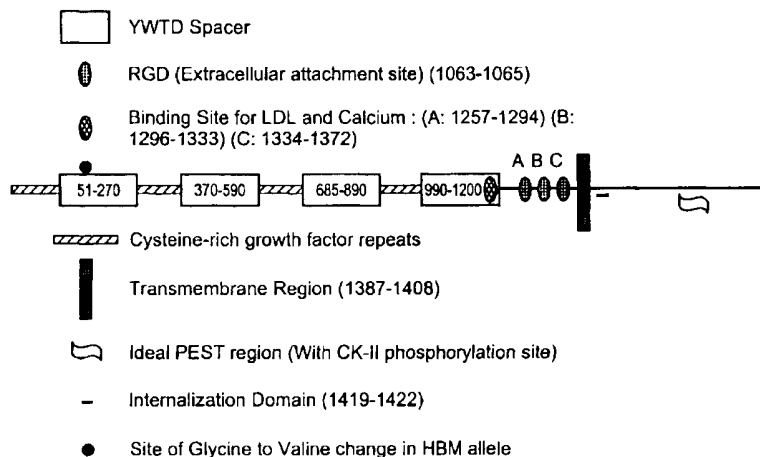
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(54) Title: THE HIGH BONE MASS GENE OF 11q13.3

Model for a LDL Receptor-Related protein, Zmax1



(57) Abstract: The present invention relates to methods and materials used to isolate and detect a high bone mass gene and a corresponding wild-type gene, and mutants thereof. The present invention also relates to the high bone mass gene, the corresponding wild-type gene, and mutants thereof. The genes identified in the present invention are implicated in bone development and in focal adhesion signaling. The invention also provides nucleic acids, including coding sequences, oligonucleotide primers and probes, proteins, cloning vectors, expression vectors, transformed hosts, methods of developing pharmaceutical compositions, methods of identifying molecules involved in bone development, and methods of diagnosing and treating diseases involved in bone development. In preferred embodiments, the present invention is directed to methods for treating, diagnosing and preventing osteoporosis.

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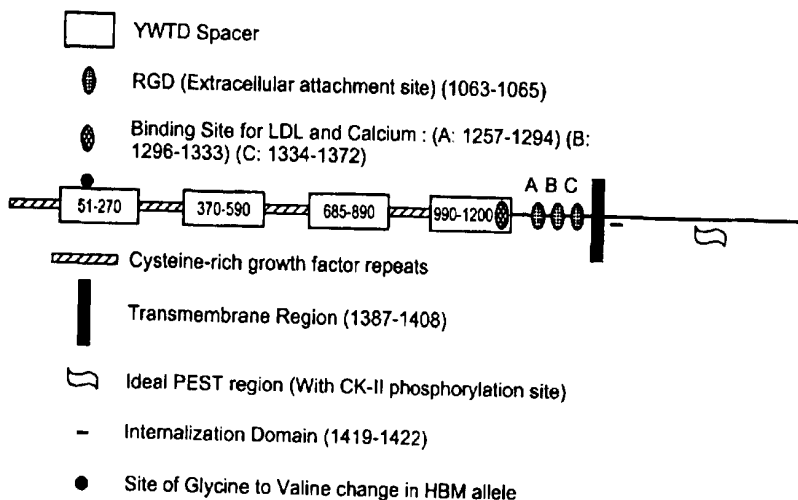
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- (74) Agents: **REA, Teresa, Stanek**; Burns, Doane, Swecker & Mathis, LLP, P.O. Box 1404, Alexandria, VA 22313-1404 et al. (US).
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(54) Title: REGULATING LIPID LEVELS VIA THE *ZMAX1* OR *HBM* GENE

Model for a LDL Receptor-Related protein, Zmax1



(57) Abstract: The present invention relates to the high bone mass (*HBM*) gene, the corresponding wild-type gene (*Zmax1*), and mutants thereof. The genes identified in the present invention are implicated in regulation of physiological lipid levels, and thereby lipid-mediated diseases and conditions. The invention also provides nucleic acids, including coding sequences, oligonucleotide primers and probes, proteins, cloning vectors, expression vectors, transformed hosts, methods of developing pharmaceutical compositions, methods of identifying molecules involved in lipid level regulation in a subject. In preferred embodiments, the present invention is directed to methods for treating and preventing atherosclerosis, arteriosclerosis cardiovascular disease, atherosclerotic and arteriosclerotic associated conditions.

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